DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

TB Notes
No. 4, 1997

Dear Colleague:

As we wrapped up the calendar year, staff of the Division of TB Elimination were busy with travel and meetings and in preparation for the National TB Controllers meeting to be held here in Atlanta January 29-31.

On December 5, Dr. Arata Kochi, director of the World Health Organization (WHO) Global TB Programme, visited CDC. After he met with Dr. Helene Gayle, director of the National Center for HIV, STD, and TB Prevention, and Dr. Dixie Snider, Associate Director for Science for CDC, he and I met in the afternoon. We discussed the Global Project on Anti-Tuberculosis Drug Resistance Surveillance (see the article on this project under "International Notes"), and how CDC and WHO can work together to increase awareness about and implementation of DOTS (directly observed therapy, short-course). For a description of the differences between DOT and DOTS, please see the article "TB and its Control in India" by Dr. Tom Frieden. Dr. Kochi also met with a number of division senior staff to get a complete update on our activities (and how our two organizations may cooperate and enrich each other.)

On December 16 and 17, I attended the U.S. Agency for International Development (U.S. AID) meeting on emerging infectious diseases in Washington, DC. The Foreign Operations, Export Financing, and Related Programs Appropriation Bill for 1998 included $50 million for the U.S. AID to fund some global health projects. Projects specified by Congress included malaria, TB, disease surveillance, and antimicrobial resistance. Our division has been meeting with U.S. AID and other global partners to discuss how to best plan the use of new resources made available for global TB efforts.

The WHO Global TB Programme (GTP), the International Union Against Tuberculosis and Lung Disease (IUATLD), the Princeton Project 55, Inc., Tuberculosis Initiative, the American Lung Association, and CDC have joined in stating the need for a global plan for the prevention, control, and eventual elimination of TB. (The Princeton Project 55, Inc., is an organization formed by the Princeton University Class of 1955, headed by Ralph Nader. Based on earlier discussions with Richard Bumgarner from WHO, the project decided to advocate for TB control needs.) Such a plan will hopefully be developed through a series of consensus-building meetings. These meetings will include, among others, experts from TB prevention and control programs, TB laboratorians, TB researchers, and representatives of public and private organizations concerned about TB. The final document should describe short-, medium-, and long-term needs in TB. The plan can then be used by governments, donor agencies, and others to target programs, articulate needs, and sustain the long-term efforts needed

to eliminate TB from the world. The planning process will begin soon, and future updates will be provided to you in *TB Notes* and through other communications. It is exciting that new partnerships such as the Princeton Project 55, Inc., Tuberculosis Initiative are being formed, and that ties with established partners such as WHO, IUATLD, and ALA are being strengthened. We stand at the threshold of exciting new frontiers as we fight TB domestically and globally.

As you know, the National TB Controllers Workshop is being held January 29-31 in Atlanta. This is a meeting that DTBE sponsors for state TB controllers, CDC field staff, TB program managers, and TB nurse consultants. The theme this year is "Back on Track Toward Elimination of TB." The main topics will include "Moving Forward with TB Prevention, Control, and Elimination," "Update on U.S. TB Surveillance Trends," "TB Case Counting Issues," "The Next Priority: Screening and Preventive Therapy," "Cutting Edge Research/Diagnostic Issues," "TB Training Issues and Innovations," "Evidence-Based Approach to TB Treatment Completion," "TB Control in the Era of Managed Care—Strategies for Sucess," "Tuberculosis Information Management System (TIMS) Brown Bag Sessions," "Foreign-Born Strategies for TB Control," "New Rapid Field Testing for HIV: Implications for TB Control Programs," "What the Model TB Centers Can Do for You," "Abstract Writing 101," and "More Effective TB Prevention in the Next Century." The National TB Controllers Association meeting will be held at the end of the workshop on January 31.

We will be participating in a conference on Global Disease Elimination and Eradication as Public Health Strategies, cosponsored by a number of organizations including CDC, WHO, The Carter Center, The World Bank, and the National Institute of Allergy and Infectious Diseases and taking place in Atlanta February 23-25. Also, the third annual meeting of the IUATLD North American Region is being held February 26-28, 1998, in Vancouver, British Columbia, Canada. The meeting last year in Chicago was outstanding; it was devoted almost exclusively to TB, with an emphasis on programmatic issues.

The First Emerging Infectious Diseases Conference will be held in Atlanta March 8-11, 1998; presentations on TB will be given on Wednesday, March 11. World TB Day is March 24, 1998, and CDC is developing messages and information to give out in connection with the event. The following month we will have the next meeting of the Advisory Council for the Elimination of Tuberculosis (ACET), which will be April 14-15, 1998, in Atlanta at Corporate Square, Building 11. One of the topics that will be discussed at that meeting is TB vaccine development.

Although we did not specifically plan to have a special focus in this issue as we did in *TB Notes*, No. 2, which featured outreach workers, this issue of *TB Notes* has an international "flavor." Several members of the staff of the Surveillance and

Epidemiology Branch contributed to an article on MDRTB in Buenos Aires, Argentina;additionally, we have articles on TB in India, TB in Somalian refugees, and the WHO global drug-resistance survey. We try to include articles about international TB controlactivities whenever possible. Because of its global nature, TB won't be eliminated in the United States until additional efforts to prevent and control TB in other parts of the world are implemented. As we pursue and forge additional partnerships with our international neighbors, we hope to publish more articles reflecting this teamwork.

I thank all of you for the important contributions you made in 1997 in the continuing fight against tuberculosis. For the past 4 years, your persistence and good stewardship of additional resources have reversed the TB resurgence and returned us to our previous downward trend. In 1996, we were able to report the lowest number of TB cases since national reporting started in 1953. We in DTBE are fortunate to have such effective and dedicated partners throughout the country. I hope you had a good holiday season, and I look forward to seeing you at the National TB Controllers meeting!

Kenneth G. Castro, MD

In This Issue

NOTE: The use of trade names in this issue is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

TB Notes

Centers for Disease Control and Prevention
Atlanta, Georgia 30333

Division of TB Elimination ♦ National Center for HIV, STD, and TB Prevention

Number 4, 1997

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Contact Investigation Involving Several Local Bars - Wisconsin, 1997

Following the diagnosis of TB in a bar patron, the local health department in Brown County, Wisconsin, began a large-scale contact investigation focusing on patrons of local bars. Efforts continue to identify, test, and provide therapy to those exposed to this infectious patient.

On January 24, 1997, the Brown County Health Department notified the TB Program, Wisconsin Division of Health (DOH), about a 43-year-old male with a suspected case of active TB. The patient had been seen in an acute care facility for cough, sore throat, and loss of voice. He was placed on Ventolin (albuterol) and sent home. Ten days later, he was transported from a neighborhood bar via ambulance to a local hospital. There he presented with a cough productive of bloody sputum, which was positive for acid-fast bacilli (AFB); weight loss; and a chest x-ray showing cavitation. The sputum was found to be positive for *Mycobacterium tuberculosis* complex using a polymerase chain reaction (PCR) assay. The patient was nearly comatose at this time and had extensive liver damage due to years of alcohol abuse. He was started on a treatment regimen of rifampin, amikacin, and ciprofloxacin because of his extensive liver damage. The patient died on February 3, 1997, of complications from TB. Cultures were confirmed as *M. tuberculosis* sensitive to all first-line drugs.

The local health department began the contact investigation by talking to the patient's close friends and reconstructing a typical day in his life. In addition to going to his job at a car wash, the patient had made daily trips to several stores, had volunteered at a food pantry, and had frequently ridden the city bus. The patient had also frequently visited several bars along one street in Green Bay, Wisconsin. The public health nurse noted that his frequency and location of alcohol consumption were similar to the pattern in four TB case patients with illness reported in 1995 and 1996. Restriction fragment length polymorphism (RFLP) testing later confirmed that the 1995, 1996, and 1997 case isolates were identical, indicating probable linkage. Hoping to help prevent the disease and deaths of others, the patient's family requested his name be released to the community, facilitating the investigation because it allowed the health department to use his name when searching for contacts. The owners of the bars were contacted and asked for permission to conduct skin testing on-site for customers and employees. Initially, three owners provided permission, and testing began in February 1997 in those three bars.

The local health department scheduled testing to coincide with times of the day when the index case had most typically been in the bar. Signs were posted to advertise the testing, and participants were given cookies

after tests were read. The bars' regular customers were aware of the medical condition of the index case prior to his death and of their own risks of infection. Patrons cooperated with skin testing and spontaneously lined up when the public health nurse arrived in the bar. Patrons who did not return in 48-72 hours for skin-test reading were located through return visits to the bars and home visits by the public health nurse. Individuals with positive skin test results were referred for chest x-ray and medical evaluation. Many of those infected were low-income, medically underserved, and homeless persons. Some infected individuals were Medicaid recipients and were able to see their own physicians, but most were referred to a local community health clinic. Patients with symptomatic illness were referred to an infectious disease specialist after sputum specimens were obtained.

As a result of initial screening, five additional cases of active TB were confirmed between March and October 1997. RFLP analysis is pending on the isolates from these case patients, but the patients are epidemiologically linked. Four additional bars were included for new screening initiatives beginning in August 1997.

As of October 1997, over 500 people have been skin-tested, with a 14% overall positivity rate. The patients with active TB have been placed on DOT, and 54% of those infected without active disease have started preventive therapy. Of the other infected individuals, some have not yet gone to see a doctor to start treatment, while others have seen a doctor but have not been started on treatment because of liver disease. Because of the high rate of alcohol consumption, liver function tests are being monitored monthly for all patients on therapy. The provision of groceries has been an effective incentive for patients on DOT and DOPT. Screening has been conducted every 3 months at the identified sites. If no more cases are discovered, the case finding activities should be completed in January 1998.

—Reported by Wisconsin TB Program, Tanya Beyer, RM(AAM), Director, and Brown County Health Department

Cultivating a Prevention Partnership Mississippi's Experience

A prevention program must be carefully seeded, cultivated, nurtured, and sustained. For more than 14 years the Mississippi Department of Corrections (MDOC) and the Mississippi State Department of Health (MSDH) have been partners in a growing collaboration to prevent TB transmission in the state's long-term confinement facilities. The partnership is essential. The prevalence of tuberculin reactivity in Mississippi's inmate population exceeds 20%. Successful preventive intervention in the state's correctional population is critical to Mississippi's TB elimination ambition.

After approximately 2 years of ground-breaking negotiations and educational briefings, the MSDH and MDOC instituted a screening program in 1983 for MDOC inmates and employees at Mississippi's sprawling prison farm. The initial program involved the annual mass screening of MDOC employees and inmates by "teams" consisting of at least one MSDH nurse, one MDOC nurse, a security officer, and a clerk. With the baseline screening completed, MDOC, on the recommendation of MSDH, cultivated a policy requiring the screening of all inmates and employees upon entry into the facility and annually thereafter. MDOC medical and security staff issued preventive medication to inmates for self-administration while MSDH staff provided technical consultation and provided personnel and supplies for the annual retesting teams. The improved program began weeding active cases out of the system and increasing TB

awareness within the system. However, self-administration of medication was suboptimal, and completion rates begged for improvement. The TB Cooperative Agreement allowed the MSDH TB Division to enrich the partnership by placing a full-time public health nurse in the main MDOC facility. The nurse evaluated the current activities and developed policies and protocols to improve the efficiency and effectiveness of the program, utilizing DOPT as the primary tool.

DOPT for MDOC inmates began in 1991. About the same time, MDOC began to expand and build new facilities in other areas of the state. MSDH adapted and responded to the growth by refortifying the partnership through funding associated with the CDC-funded HIV-Related TB Prevention (HRTP) project. The addition of HRTP staff in the new facilities allowed the two agencies to address the escalating number of inmates and the increased movement of inmates. This led to the development of a referral and tracking system that encompassed the entire state and a DOPT program including, when necessary, follow-up into the inmate's free life.

MDOC presently has three main State facilities, two private facilities, and 17 county or satellite facilities, with additional housing in 82 county jails. Recent changes in sentencing law created an inmate population growth from 4,000 at the beginning of the partnership to the 15,000+ daily census of today. The number is projected to increase to more than 30,000 by the year 2000. The changes include laws requiring inmates to serve 85% of their sentence and two versions of the "three strikes, you're out" law.

The referral groundwork that MDOC and MSDH established and enhanced through the HRTP grant prevented the current growth rate from devastating Mississippi's TB prevention program. Cooperative agreement funds gave MSDH the flexibility to adjust outreach staff to meet demands. MDOC acknowledged the growing need, the program's long-term benefit, and their responsibility by adding nursing support to the effort. MDOC is receptive to TB program recommendations and encourages MSDH assistance in planning for future needs. The partnership has influenced MDOC to developed policies that ensure existing programs can grow with the anticipated huge influx of inmates.

HOW IT WORKS

Evaluation for TB infection and disease starts at the county level. Inmates are generally incarcerated in county or regional facilities following conviction, pending transfer to an MDOC facility. If the inmates remain in a local jail 7 or more days, the local health department provides tuberculin testing, additional symptom assessment, and referral to the MDOC medical facility if further evaluation is indicated. When inmates are transferred to the MDOC central processing facility for classification, they are screened prior to further processing if they have not been screened within the past 30 days. Infected inmates are x-rayed and medically evaluated for appropriate therapy. Suspects and cases are immediately transferred to the MDOC Medical/Dental Facility for isolation and additional evaluation. Inmates placed on preventive therapy are given DOPT by a MSDH nurse or outreach worker. MSDH nurses have access to the MDOC database and the daily movement data to facilitate the tracking of inmates within the system and to minimize interruptions in therapy. If an inmate on therapy is released or paroled, the MSDH or MDOC nurse notifies the resident county and refers the inmate for follow-up. The reverse is true if a health department patient is incarcerated. County staff notify the MSDH correctional nurse and transfer the patient's record to MDOC.

The MSDH correctional nurse consultant is the liaison between the health department and the correctional system. By virtue of

being public health nurses housed in the correctional setting, they are at the point where the lines between the two agencies become blurred. They use the resources of both agencies to maximize the potential of the preventive partnership.

MDOC facilities use MSDH forms and follow MSDH standards and protocols for TB, simplifying documentation and follow-up recommendations. MDOC philosophy has been that MSDH is in a position to know current trends, and has an established mechanism to disseminate that information expediently. Therefore, new MSDH policies are readily accepted and carried out.

THE YIELD

Preliminary data indicate that, through the partnership, the HRTP project enrolled 10,878 participants, from February 1, 1994, through March 31, 1997. A Mantoux tuberculin test was applied and read within 4 weeks of enrollment or date eligible for screening in 10,183 (99.5%) of the 10,234 who were eligible, excluding 644 who had documentation of a prior significant tuberculin test (project objective 95%). Thirteen reported TB symptoms on initial screening, and 1,397 had a skin test result $\geq$ 5 mm. In addition, 137 enrollees (1.3%) were HIV-positive, 2 have unknown HIV results, 2 did not have HIV tests done, and 10,736 were HIV-negative.

Evaluation referrals for additional follow-up were recommended for 2,090 of the individuals enrolled. The evaluation index is 98.1% (project objective 95%). The initiation of preventive therapy index is 95.6% (project objective 90%), and the completion of preventive therapy index is 91.8% (project objective 80%) of the 1,290 starting therapy.

During the 1996 screening of MDOC employees (3,975 total employees; 626 new and 3,349 continuing):

- 23 (3.7%) new employees were known tuberculin reactors at the time of employment
- 21 (3.5%) new employees were found infected on initial testing (excluding known reactors)
- 462 (13.8%) continuing employees were known reactors
- 29 (1.0%) continuing employees converted to positive (excluding known reactors)

During the 1996 screening of MDOC inmates (22,642 total inmates; 11,816 new or returning and 10,826 continuing):

- 1,314 (11.1%) new or returning inmates were known reactors at the time of incarceration
- 523 (5.0%) new or returning inmates tested positive on initial screening (excluding known reactors)
- 2,566 (23.7%) continuing inmates were known reactors
- 240 (2.9%) continuing inmates converted or boosted at annual screening (excluding known reactors)

Workloads within the MSDH and MDOC continue to grow with no increase in staff. The addition of two 1,000-bed private prisons—and plans for more—prompted a recent policy change. Wardens from all the State's major correctional facilities, the Deputy Commissioner, and parole and classification personnel met with TB Program staff to discuss issues and concerns and ways to address TB within the continuing expansion of MDOC facilities. At the conclusion of the meeting, all concurred that infected inmates who have not received or completed treatment will be housed at only one of the three main MDOC facilities. DOPT can be monitored there by the HRTP nurses or the grant outreach workers. Inmates are given up to 12 months of DOPT regardless of age, owing to the social and risk factors in the inmate population and to the additional protection provided by 12 months of preventive therapy, i.e., a 93% reduction in cases, compared with a 69% reduction in cases provided by 6 months of preventive

therapy. In addition to the twice-weekly observation, monthly evaluation visits are performed. These visits include historical assessments of the last month's treatment, weight, BP monitoring, and liver function testing. MSDH TB program's educational materials and training are freely available to MDOC. The growth in the inmate population provides an opportunity to test and give preventive treatment to a high-risk group that would otherwise have been undetected and inaccessible. MDOC and MSDH work together toward the common goal of the elimination of TB in Mississippi.

—Reported by Annette Dungan, RN, and J. Michael Holcombe, MPPA, CPM
Mississippi TB Control Program

Minnesota Holds Workshops on Cultural Issues

As in many areas of the United States, an increasingly large proportion of TB cases diagnosed in Minnesota occur in persons born outside the country. In 1995, half (78/156) of the new TB cases in Minnesota were in foreign-born persons. By 1996, this figure had risen to 60% (78/131), compared to 37% nationally. It is anticipated that this figure will increase in Minnesota during 1997. In addition, Minnesota immigrants from nearly 40 different countries currently receive state-provided preventive INH therapy.

Minnesota's changing demographics present new challenges for local public health agencies and private clinicians providing health care for Minnesota residents. In addition to the usual obstacles to adequate TB treatment (e.g., cost, transportation, medication side effects, etc), immigrants also experience language barriers and stresses caused by adjustment to life in a new country and culture. Health care providers frequently lack access to professional interpreters, particularly in rural Minnesota. Health education materials often are not available in languages other than English and Spanish. Health care and public health providers working with foreign-born persons may have difficulty obtaining an adequate medical history, assessing a patient's level of understanding about treatment recommendations, and communicating about medication adherence and side effects. In addition, immigrants may lack health insurance or be accustomed to obtaining government-sponsored health care at no cost. Patients' attitudes toward TB also vary by culture. For example, a BCG-vaccinated person from an area of the world where Mantoux screening is not performed may not readily accept preventive therapy for TB infection.

To assist health care and public health workers in Minnesota with providing TB control services for an increasingly diverse population, the Minnesota Department of Health (MDH) TB Prevention and Control Program developed a series of workshops entitled "Cultural Issues in Tuberculosis Control." These statewide workshops were held at five locations in Minnesota where new immigrant and refugee populations are concentrated. The workshops were targeted at public health nurses, clinic nurses, industrial health nurses, school nurses, and hospital infection control practitioners. Other participants included epidemiologists, factory safety officers, and physicians. In order to facilitate audience participation and interaction, registration was limited to 30 participants at most locations.

The primary purpose of the workshops was to raise awareness regarding issues related to TB control in persons whose cultural backgrounds differ from the dominant culture, and to provide nurses with information and skills necessary to be effective with culturally diverse patients. Educational objectives included the following:

- Participants will understand cultural factors that affect the use of TB control services by persons in their service areas and will develop skills in working with

culturally diverse clients.
- Participants will be able to describe current trends in the epidemiology of TB, with emphasis on Minnesota residents born outside the United States.
- Participants will be able to describe the complementary roles of the public and private sectors in TB control.
- Participants will be aware of resources for TB control and refugee health that are available through MDH and other agencies.

The agenda for each of the five 1-day workshops was tailored to meet the needs and challenges of the surrounding communities. Morning sessions included a description of the epidemiology of TB, a review of the role of state and local health departments and the private sector in TB control, and an overview of the MDH Refugee Health Program. The afternoon included an experienced public health nurse's presentation of practical suggestions for working successfully in the field with TB patients of diverse cultural backgrounds, with emphasis on directly observed therapy (DOT) and the use of peer outreach workers. In addition, Minnesota's Refugee Health Coordinator, herself a former refugee, discussed cultural competence in health care settings. The workshops concluded with a 90-minute panel discussion with local representatives from a variety of cultures, including Somalian, Sudanese, Russian, Bosnian, Mexican, Vietnamese, and Laotian. Very few of the panel members had any formal health care training; they spoke about their personal immigration experiences, health care in their countries of origin, and cultural attitudes towards TB. Panel members also responded to audience questions.

Funding from Minnesota's 1997 Cooperative Agreement with CDC was used to help finance the workshops. These funds covered the costs of two planning meetings with a committee of statewide representatives, publicity materials, postage, participants' course materials, and fees and travel expenses for workshop presenters. In addition, participants paid a $20 registration fee to cover the cost of lunch, refreshments, and rental of the conference facilities. Participants received five contact hours of nursing continuing education credits.

Evaluations from participants have been overwhelmingly positive. Attendees especially appreciated the opportunity to interact with community members and representatives of culturally diverse populations in the panel discussion and the variety of written reference materials provided. In addition to increasing the cultural awareness and skills of nurses responsible for TB control at the local level, these workshops have yielded other benefits, including an enhanced partnership between the TB and Refugee Health Programs at MDH and increased awareness in the community regarding resources available through MDH. Owing to the overwhelmingly positive response to these workshops, MDH intends to repeat the workshop in at least two locations in Minnesota during the spring of 1998. Local public health agencies and community organizations will be asked to cosponsor the upcoming workshops with MDH, thereby eliminating facility rental fees, enhancing publicity, and increasing community awareness about the workshops.

—*Submitted by Deborah Sodt, RN, MPH*
Minnesota Department of Health
Div of Disease Prevention and Control

Physicians' Emergency Certificate to Detain Patients - Louisiana

The Louisiana State Legislature recently passed a Revised Statute (R.S. 40:31.24) that provides a mechanism to detain TB patients who desire to leave a hospital against medical advice. To execute the Physician's Emergency Certificate (PEC), the hospital's infectious disease physician must

confirm that the patient has active, communicable TB and has refused treatment. The PEC allows the hospital to hold the patient for 15 days, and requires the physician to contact the Office of Public Health to coordinate transfer to a TB treatment facility. The patient is protected from arbitrary application of the PEC by a requirement for a second physician to confirm the findings of the initial examination.

For further information or a copy of the statute, please contact the Louisiana TB Control Section at (504) 568-5015.

—Reported by J. Scott Jones
Louisiana TB Control Section

DTBE Initiates Field Staff Work Group

The Division of TB Elimination (DTBE) has developed a Field Staff Work Group (FSWG), composed of members of the DTBE field staff and staff from the division headquarters and designed to enhance communications between the two groups. The Work Group will help the chief of the Field Services Branch (FSB), other division branch chiefs, and the Office of the Director to promote and disseminate, in a consistent fashion, information pertinent to current DTBE vision and philosophy, major division initiatives, cooperative agreement funding and processes, and planned projects and research. The Work Group will also allow for the enhanced communication of expectations of the division's field staff.

Five members of the division's Public Health Advisor field staff were selected by the Chief, FSB, from a pool of nominees from the field staff and asked to participate in the Work Group. The members are Mark Fussell, Tallahassee, FL; Ken Shilkret, Trenton, NJ; Bill Coggin, Baltimore, MD; Ken Johnson, New York City, NY; and Melinda Salmon, Philadelphia, PA. Headquarters staff include the Chief, FSB; the Field Operations Section chiefs; and the FSB program consultants. Initially, three members will serve a term of 3 years and two members will serve a term of 2 years. Subsequently, all members will serve a 2-year term.

The Work Group will meet in person at least twice annually, with one meeting taking place in conjunction with the National TB Controllers Workshop. Other meetings and discussions will take place, as needed, via telephone conferences, which will be arranged by and supported through the division.

Some areas of interest of the Work Group include (not in order of priority):

- Develop and help implement strategies to further enhance communication between field staff and division headquarters
- Assist in the development of agendas for annual division field staff meetings
- Identify and promote enhanced dissemination of division-based research projects and publications
- Assist division headquarters in the development of additional division-based career opportunities for field staff
- Collect, present, address, and provide feedback on technical, program, fiscal, and training-based issues and requests generated from division field staff
- Identify potential areas of collaboration with other FSB sections and division branches
- Identify and employ strategies to promote unity and cohesion among field staff

The FSWG has met twice thus far and has been involved in the following activities:

- Polling fellow field staff members to identify priority activities.
- Assisting DTBE in developing a Division vision statement for the future roles, desired activities, and number of TB Public Health Advisor assignees to state

and local health department TB programs.
- Assisting DTBE in enhancing the communication of state and local TB control issues and events through regularly scheduled reports.

—Reported by Patricia M. Simone, MD
Division of TB Elimination

Section of Nursing and Allied Professionals of the IUATLD

The Section of Nursing and Allied Professionals is one of the six scientific sections of the International Union Against Tuberculosis and Lung Disease (IUATLD) headquartered in Paris, France. It was established in 1994 as part of an effort to extend the membership of the IUATLD to nurses and other allied professionals working in TB and other lung diseases.

The objectives of the Section are to
- Build international cooperation and promote and support TB nursing networks within member countries;
- Establish a forum for exchanging ideas and information about TB care and program implementation during annual and regional conferences and workshops;
- Establish an avenue for sharing educational materials, courses, and patient care protocols and procedures;
- Provide continuing education opportunities for nurses and allied professionals working with TB or other lung diseases;
- Provide an opportunity for these professionals to participate in operational research and work on issues of common interest by joining year-round working groups.

The Section of Nursing and Allied Professionals contributed to the overall success of the 1997 Annual Meeting of the IUATLD held in Paris. The Section hosted two poster discussion sessions featuring innovations in training and education as well as nursing contributions to TB patient care and program implementation. The United States was well-represented at the poster discussion sessions. TB nurses and health educators from several state TB programs and TB Model Centers shared their innovative training and patient care strategies with colleagues from Japan, Australia, Brazil, Malawi, Kenya, The Netherlands, England, and Germany. Gail Gutierrez, RN, from Los Angeles and Vilma Barton, RN, from New York City participated in a symposium entitled "TB Services for Hard-to-Reach Populations" held jointly by the TB and Nursing Sections of the IUATLD. The Section's postgraduate course on TB Case Management for Nurses, offered by the New Jersey Medical School National TB Center training staff, provided a forum for nurses and allied professionals to obtain continuing education as well as exchange information and expertise among global partners.

The next activity of the Section of Nursing and Allied Professionals will be a Nursing Session at the 3rd Annual Meeting of the North American Region of the IUATLD, to be held in Vancouver, Canada, February 26-28, 1998. This session will highlight efforts to manage TB patients among the disadvantaged such as aboriginal persons, inner city poor, prison populations, the elderly, and immigrants and refugees.

—Reported by Rose Pray, RN, MS
Division of TB Elimination

NEWS BRIEFS

The government Web site *healthfinder*™ provides user-friendly access to the broad range of consumer health information resources produced by the federal government and state governments and their many partners. *Healthfinder*™ meets the needs of the growing numbers of consumers

who are using the Internet to search for reliable health information.

Healthfinder™ provides links to over 225 federal and state agency Web sites and more than 1,000 other organizations at universities, associations, and non-profit organizations. The site provides access to databases, online documents, publications, clearinghouses, and referral services, as well as to more technical medical information.

The Web site helps consumers become more active participants in their own health, from prevention to diagnosis and treatment. Developed by the Department of Health and Human Services' Office of Disease Prevention and Health Promotion (ODPHP) in collaboration with many other agencies, the goal of the site is to improve consumer access to government health information.

The user-friendly searching capabilities and multi-subject index of *healthfinder*™ enable consumers to navigate vast information resources easily. More than 1,000 topics are available through *healthfinder*™. The Web site address for *healthfinder*™ is www.healthfinder.gov.

OUTBREAK UPDATE

MDRTB in Buenos Aires, Argentina

Starting in 1992, nosocomial transmission of multidrug-resistant *Mycobacterium tuberculosis* (MDRTB) has been occurring among AIDS patients in a Buenos Aires, Argentina, hospital. Over 250 cases were diagnosed from 1992 through 1995. All isolates showed resistance to isoniazid and rifampin and at least one additional drug. The most common drug resistance pattern included resistance to isoniazid, rifampin, ethambutol, streptomycin, kanamycin, and pyrazinamide.

From December 1993 through June 1995, 88% of tested MDRTB isolates from AIDS patients were found to have the same 8-band DNA fingerprint pattern. Of the cases with matching fingerprints, 91% had prior admissions to the hospital.

Transmission of MDRTB continued in 1996 despite implementation of infection control measures. In November 1996, CDC was invited by the president of the Argentine Medical Association and the Minister of Health, City of Buenos Aires, to aid in the solution of this problem. A study was undertaken to:

- Identify risk factors for MDRTB in AIDS patients in Buenos Aires diagnosed in 1996
- Assess the influence of infection control procedures in the hospital on the continued nosocomial transmission of MDRTB

Patients with TB and HIV were identified through 1996 mycobacteriology laboratory records. An MDRTB case was defined as a patient whose isolates were resistant to isoniazid, rifampin, and either streptomycin or ethambutol. We reviewed the 1996 hospital records of AIDS/TB patients, and compared characteristics of AIDS patients with MDRTB to those AIDS patients with fully susceptible TB. Infection control procedures at the hospital were evaluated to determine where transmission might be taking place.

The investigation found that transmission was continuing in 1996, with a total of over 300 cases of MDRTB among HIV-positive patients at the hospital since 1992. In 1996, 114 MDRTB/AIDS patients and 130 susceptible TB/AIDS patients were diagnosed. In a univariate analysis comparing MDRTB patients to patients with susceptible TB, MDRTB patients had lower median CD4 counts (20 vs 60 cells/mm^3), and were more likely to have had prior hospital admissions, outpatient visits, TB treatment, and opportunistic infections, and to have died by the end of 1996. More patients

with susceptible TB had a history of incarceration. In a multivariate logistic regression, prior admissions to the hospital under study emerged as the only characteristic significantly correlated with MDRTB.

Most patients with TB were hospitalized after their diagnosis. AIDS patients were grouped in cohorts on open wards. AFB smears were done at the time of patient admission. No negative pressure acid-fast bacillus (AFB) isolation rooms exist at the hospital, so AIDS patients with AFB-smear positive sputum were admitted to single rooms on AIDS wards. These rooms have doors and portable HEPA air filtration units, but do not have ventilation systems separate from the rest of the AIDS ward. Surgical masks are used by patients, staff, and visitors for respiratory protection. Many patients with AFB smear-positive sputum were noncompliant with infection control guidelines, left doors open, and did not stay in their rooms or wear masks.

Rapid radiometric culturing technique (BACTEC) was available starting in April 1996 for AIDS patients with TB. After drug susceptibility results were reported, AIDS patients known to have MDRTB were cohorted on a separate ward. Median stay on the AIDS ward before transfer or discharge was 25 days in 1996, compared to 70 days in 1995. At least one infectious AIDS/MDRTB patient was present on the AIDS wards at all times during 1996.

Directly observed therapy (DOT) was not used. Owing to nurse understaffing, patients were allowed to take their medications themselves. All patients with suspected TB were started on four first-line anti-TB medications (isoniazid, rifampin, ethambutol, and pyrazinamide). When the diagnosis of MDRTB was confirmed, second-line anti-TB treatment was begun; until that time patients with drug-resistant TB remained infectious on general AIDS wards.

Medications for confirmed cases of MDRTB were brought into the country in small shipments on an individual patient basis; the supply was irregular and unreliable, and had been interrupted in 25% of patients who were treated for MDRTB. Treatment for MDRTB consisted of a combination of four of the following six drugs to which the outbreak strain was generally susceptible: prothionamide (an ethionamide analog), ofloxacin, cycloserine or terizidone (a cycloserine analog), clofazimine, and para-amino salicylate.

Confirmation of MDRTB occurred 15-60 days after specimen collection. Available susceptibility testing to second-line medications includes only para-amino salicylate (PAS), kanamycin, and cycloserine, and susceptibility testing to these medications was not routinely performed, even in *M. tuberculosis* isolates resistant to first-line medications.

Nosocomial exposure of patients to this MDRTB strain has been somewhat limited by shortening the stays of infectious patients on wards. However, because of constraints described in this article, the hospital has been unable to make many changes recommended by the CDC investigation team. The nosocomial spread of MDRTB among AIDS patients is continuing. Although the number of incident cases decreased in 1996, there were 50 new cases reported in the first 4 months of 1997. The CDC investigating team had recommended that the hospital make the following changes in order to interrupt this nosocomial outbreak: (1) Respiratory isolation must be created and enforced; however, engineering constraints in an antiquated facility make this challenging. (2) If changes to the ventilation system are not possible, AIDS patients with positive AFB smears should be cohorted apart from other AIDS patients. (3) DOT should be used to minimize the infectious period of hospitalized patients. (4) A consistent supply of medications is needed. (5) Until drug

susceptibility results are known, TB/AIDS patients with previous admissions to this hospital should be treated with TB medications to which the outbreak strain is susceptible, in addition to standard first-line medications, with frequent monitoring for side effects.

The problem of nosocomial transmission of MTB is now recognized as a significant one in both the developed and developing world. The WHO has convened a workgroup that is now in the process of developing recommendations on infection control in international settings. The guidelines promulgated by this group will assist health departments in diverse geographic settings, including areas with restricted resources, in the design and implementation of effective infection control programs.

—Reported by Cindy Weinbaum, MD, Renee Ridzon, MD, Sarah Valway, DMD, MPH, and Ida Onorato, MD
Division of TB Elimination

INTERNATIONAL NOTES

WHO/IUATLD Global Project on Anti-TB Drug Resistance Surveillance

Background

Antimicrobial resistance in previously susceptible organisms occurs wherever antibiotics are used for the treatment of infectious diseases in humans and animals. With increasing antibiotic use, and misuse, over the past decades, resistance has emerged in all kinds of microorganisms —including *M. tuberculosis* —posing new challenges for both clinical management and control programs.

Resistance of *M. tuberculosis* to antibiotics is a man-made amplification of spontaneous mutations in the genes of the tubercle bacilli. Treatment with a single drug—due to irregular drug supply, inappropriate prescription, or poor adherence to treatment—suppresses the growth of susceptible strains to that drug but permits the multiplication of drug-resistant strains. This phenomenon is called *acquired resistance*.

Subsequent transmission of such resistant strains from an infectious case to other persons leads to disease which is drug resistant from the outset, a phenomenon known as *primary resistance*.

Dramatic outbreaks of multidrug-resistant TB (MDRTB) in HIV-infected patients in the United States and in Europe have recently focused international attention on the emergence of strains of *M. tuberculosis* resistant to antimycobacterial drugs.

MDRTB—defined as resistance to the two most important drugs, isoniazid (INH) and rifampicin (RMP)—is a potential threat to TB control. Patients infected with strains resistant to multiple drugs are extremely difficult to cure, and the necessary treatment is much more toxic and expensive.

Drug resistance is therefore a potential threat to the standard international method of TB control: the DOTS strategy ("directly observed treatment, short-course").

In 1994, WHO embarked on the project discussed in this article to discover the extent of that threat. At that time, the available information suggested that levels of resistance may have been increasing in some settings, but methodological limitations prevented an adequate assessment of the extent of the problem throughout the world and precluded meaningful comparisons between different countries.

WHO/IUATLD Global Project on Antituberculosis Drug Resistance Surveillance

In early 1994, the WHO's Global

Tuberculosis Programme joined forces with the International Union Against Tuberculosis and Lung Disease (IUATLD) and started the Global Project on Anti-tuberculosis Drug Resistance Surveillance. The objectives of the project were to measure the prevalence of anti-TB drug resistance in several countries world-wide using standard methods and to study the correlation between the level of drug resistance and treatment policies in those countries.

The first step towards achieving the objectives was the development of common definitions and guidelines by world experts in 1994. These focused around three major principles: (1) surveillance must be based on a sample of TB patients representative of all cases in the country; (2) primary and acquired drug resistance must be clearly distinguished in order to interpret the data correctly; and (3) proper laboratory performance must be assured.

The second step was the establishment of a Global Network of Supranational Reference Laboratories (SRLs) to serve as the reference centers for quality assurance of drug-susceptibility testing (DST). Currently, the network comprises 22 SRLs. The third step was to organize a Working Group under the leadership of WHO with representatives of national TB programs (NTPs) and research institutions from over 50 countries to implement surveillance projects at country level.

The first phase of the Global Project described in this report includes results from 35 countries on five continents. Surveillance or surveys were conducted on approximately 50,000 TB cases sampled from areas representing 20% of the world's population. Each study enrolled 59 to 14,344 TB patients (mean 1,200). Testing for INH and RMP was accurate; resistance to ethambutol (EMB) and streptomycin (SM) was also evaluated. Overall agreement between the SRL and the various National Reference Laboratories was 96%. All countries, except three, distinguished between primary and acquired resistance.

Main Findings

Primary drug resistance. This information is obtained from cases with effectively no previous treatment. It reflects the transmission of strains that were already resistant. The prevalence of resistance to any drug ranged from 2% (Czech Republic) to 41% (Dominican Republic), with a median value of 10.4%. Primary resistance to all four drugs tested was found in a median of 0.2% of the cases (range 0 to 4.6%). Primary MDRTB was found in every country surveyed except Kenya, with a median prevalence of 1.4%, range 0 (Kenya) to 14.4% (Latvia).

Acquired drug resistance reflects more recent case mismanagement. The populations assessed for this are patients who have been treated for a month or longer in the past. As expected, the prevalence of acquired drug resistance was much higher than that of primary drug resistance. The prevalence of acquired resistance to any drug ranged from 5.3% (New Zealand) to 100% (Ivanovo Oblast, Russia), with a median value of 36%. Resistance to all four drugs among previously treated patients was reported in a median of 4.4% of the cases (range 0% to 17%). The median prevalence of acquired MDRTB was 13%, with a range of 0% (Kenya) to 54% (Latvia).

Overview of the global situation. These findings are probably an underestimate of the magnitude of the problem worldwide as the countries surveyed had better TB control than average. Resistance to TB drugs is probably present everywhere in the world. Certainly, MDRTB is present in five continents, a third of the countries surveyed having levels above 2% among new patients. In Latvia 22% of all patients presenting for treatment had MDRTB. The region of Russia surveyed had 7% of TB patients with MDRTB. In the Dominican Republic, 9% of TB patients had MDRTB. In Africa, Ivory

Coast has also witnessed the emergence of MDRTB. Preliminary reports from Asia (India and China) show high levels of drug resistance as well. In the State of Delhi, India, 13% of all TB patients had MDRTB.

Correlation of prevalence of drug resistance with TB control policy and activities. An important finding of the study was the higher prevalence of MDRTB in countries categorized by WHO as having poor control programs. Similarly, the higher the proportion of retreatment cases (the result of a poor program), the higher the levels of drug resistance. The use of standardized short-course chemotherapy regimens, on the other hand, was associated with lower levels of drug resistance.

Conclusions

1. Drug resistance is ubiquitous. The Global Project found it in all countries surveyed. The levels of resistance to INH are high, and continued failure to improve TB control will fuel multidrug resistance.

2. There are several "hot spots" around the world where MDRTB prevalence is high and could threaten control programs. They include Latvia, Estonia, and Russia in the former USSR, the Dominican Republic and Argentina in the Americas, and Ivory Coast in Africa. Preliminary reports from Asia also show high levels of MDRTB. Urgent intervention is needed in these areas.

3. There is a strong correlation between both the overall quality of TB control and use of standardized short course chemotherapy and low levels of drug resistance. A high prevalence of MDRTB is the result of therapeutic anarchy. Half the countries or regions with the worst TB control had primary MDR levels above 2%, compared with one fifth of those with moderate control, and none of the countries with the highest standard of TB control.

4. The MDRTB level is a useful indicator of NTP performance. As shown by the Global Project and by previous experiences in Korea and New York, the prevalence of primary MDRTB is a good "summary" indicator of the performance of NTPs in recent years.

Recommendations

A. Surveillance

For the future, the authors propose the following recommendations concerning surveillance:

1. The well-established network of SRLs is a model for standardized surveillance of drug resistance and should be maintained as a global resource. Surveys using the SRL network need to be repeated in the same 35 countries around the year 2000 to determine MDRTB trends over time.

2. Adequate assessment of the level of MDRTB in large countries (China, India, Russia) requires expansion of surveillance activities beyond the regions studied. Areas not adequately covered during the first phase of the Global Project must be targeted.

3. Future surveys should collect and analyze individual data on age, HIV-coinfection, and country of birth, and on the contribution of the private sector to drug resistance.

B. Management

1. Countries without the DOTS TB control strategy need to implement it. This is supported by the Global Project's finding of an association of low resistance and high quality TB control. Previous experience has also demonstrated falls in resistance, and even in MDRTB, following the introduction of DOTS.

2. The Global Project did not directly address the issue of treatment regimens.

Based on previous experience, however, no alterations to the first-line treatment regimens recommended by WHO and IUATLD are yet required. For the management of drug-resistant TB, including MDRTB, the reader is referred to "Guidelines for the Management of Drug-resistant Tuberculosis" (WHO/TB/96.210).

C. Research

1. The authors recommend research to:
   a) Assess the transmissibility and clinical virulence of MDRTB compared to disease caused by drug-susceptible strains.
   b) To define the impact of MDRTB on treatment outcomes under program conditions in developing countries.

2. Pharmaceutical companies are urged to develop new anti-TB drugs. The prime need for such drugs is to make DOTS more efficient and to shorten the duration of treatment, thus making resistance less likely to emerge.

—Reported by Mario Raviglione
World Health Organization

The above report is available for viewing on the Internet. Just go to the World Health Organization home page, http://www.who.ch/. Select **Publications, Language, Terminology and Library Services**, select **Just Published**, and you will find it.

TB in Refugees from Somalia

By the end of 1997, nearly 4,000 refugees of the Barawan clan from Somalia (Africa) had resettled in various locales scattered throughout the United States. The refugees, who have been housed in camps in Mombasa, Kenya since 1992, come from a country where TB case rates are many times that found in this country.

The refugees have been medically examined for infectious TB and other diseases affecting the public health by health-care staff of the International Organization for Migration (IOM) in Mombasa. The results of these examinations were entered into a computer database. As of September 18, 1997, a total of 3,938 refugees underwent medical examinations and 3,773 were cleared for departure. The average age of the refugees was 20½ years (range, 0-80); 39% were <15 years and 15% <6 years old; gender was equally distributed (47.5% are females). In addition to screening for TB, 99% of refugees ≥15 years were tested for HIV infection; 19 were found positive by enzyme-linked immunosorbent assay (ELISA) and averaged 32 ½ years old (range, 15-57). Of these, 18 (0.8% of those ≥15 years old) were confirmed by Western blot, one was found to be not infected.

Of the 2,460 (97% of those ≥15 years old) who had chest radiographs performed, 380 (15%) had abnormal radiographs because of lung findings. The significant findings were six with cavities, four with consolidation, and 104 with infiltrates. Sixty-six percent (1,023) of the children (<15 years) had PPD tests; in 10% PPD size was 10-19 mm and in 1.5% PPD size was ≥20 mm. Of those with PPD ≥20 mm, 13/14 had normal chest radiographs and one had a prominent left hilum. In total, 311 (13% of those with chest radiographs) had a TB classification. Three consecutive early morning sputum specimens were collected from refugees with an abnormal chest radiograph suggestive of pulmonary TB. Eight refugees were found to be smear-positive (class A, three of these have completed treatment at the time of this report), 115 with a classification of non-infectious active TB (class B-1, 17.4% of whom are under treatment), and 188 with a classification of non-active TB (class B-2).

Although treatment of persons with confirmed TB disease (class A) should remain the number one priority of health departments with respect to TB, follow-up of refugees with

class B-1 and B-2 TB may identify more cases with active TB than contact tracing and, therefore, justify its undertaking as a health department priority. TB-infected refugees without disease should also be evaluated for preventive treatment. Health department officials should work closely with state refugee health program coordinators, refugee sponsors, and voluntary organizations to ensure that all refugees are properly evaluated for TB and treated, if necessary.

—Reported by Vincent Keane,MBBS,MPH,TM and Socorro C. Gonzaga, MD
International Organization for Migration
Susan Cookson, MD, and Paul Tribble, MA
CDC/Division of Quarantine

TB and its Control in India

Background

India has aptly been described as a continent rather than a country, with a population larger than that of all of Africa. This vast population, unfortunately, has a high burden of TB disease. There are large disparities in health between males and females, between urban and rural areas, and between different states of the country. Policy and implementation of health services are decentralized, with health being the responsibility of state governments (32 in the country, with populations of up to 180 million).

Epidemiology

There were 1.3 million cases of TB reported in 1996. However, this information was based on reporting from only about two thirds of the country's districts containing approximately 81.5% of the country's population. If the assumption is made that the rate in nonreporting districts was the same as that of the reporting districts, then the calculated number of reported cases would be nearly 1.6 million, for an incidence of 168/100,000. However, many of these cases are prevalent cases, and over-diagnosis based on x-ray is common.

Information on age and gender distribution of new sputum-smear positive cases is available for the project sites of the Revised National TB Control Programme (RNTCP). There is a striking decrease in the proportion of females among smear-positive patients over age 35. This could be caused by lower TB infection rates in this cohort of women, decreased access to health care, decreased susceptibility to disease, or less effective sputum production among patients examined. Interestingly, 70% of all extra-pulmonary cases were among women. (For comparison, it is intriguing to remember that in my previous assignment in New York City, even among HIV-negative patients, the male:female ratio was more than 2:1.)

It is estimated that there are somewhere between 1 and 3 million**new** cases of TB a year, of which 500,000 to 1,000,000 are pulmonary smear-positive. In at least one area, HIV seroprevalence has been found to be increasing, occurring in up to 18% of hospitalized patients.

Status of TB Control/Constraints and Challenges

TB control activities are integrated into the general health services. Slightly more than half of all patients are diagnosed at peripheral health institutions. In the RNTCP, enhanced microscopy services will be available for every 100,000 persons, and it is expected that quality of and accessibility to diagnosis will both improve; there will be systematic quality control of microscopy services. Regimens used in the RNTCP are presented in the table below.

Treatment is extended for one month in Category I and Category II if the sputum smear is positive at the scheduled end of the intensive phase.

In the intensive phase of treatment, every dose is directly observed by a health worker or community volunteer. In the continuation

Category of Treatment	RNTCP Regimens*
Category I (New smear-positive and seriously ill smear-negative and extrapulmonary cases)	$2H_3R_3Z_3E_3$ / $4H_3R_3$
Category II (retreatment cases including relapses, treatment after interruption, and patients who fail Category I or III treatment)	$2H_3R_3Z_3E_3S_3$ / $1H_3R_3Z_3E_3$ / $5H_3R_3E_3$
Category III (New smear-negative or extrapulmonary cases who are not seriously ill)	$2H_3R_3Z_3$ / $4H_3R_3$

*H=isoniazid; R=rifampin; Z=pyrazinamide; E=ethambutol; S=streptomycin
Prefix=no. months; suffix=no. days administered/wk.

phase, the first dose is directly observed and the remaining 2 doses are self-administered. At time of treatment initiation, each patient is assigned a box that is kept at the observation site and that contains medicine for the entire treatment. In this way, it is ensured that the complete course of medication is available for all patients who begin treatment.

DOTS Implementation

Following a program review in 1992, pilot implementation of DOTS began in India in 1993. (*DOTS* differs from *DOT*, although this is often misunderstood. See next page.)

Several of the key principles of DOTS, including case finding in primary health care institutions by microscopy of patients attending health facilities, domiciliary treatment, supervised treatment, and intermittent dosing, were first demonstrated to be effective in India. Since 1993, DOTS has been piloted in 20 sites as the RNTCP, with a population of more than 18 million, and have shown good quality of diagnosis and cure rates of around 80%. These results have been achieved despite the pilot projects' lacking many basic inputs that should be provided during scale-up of the project, and are a dramatic improvement from the earlier program.

Currently, 2% of the country's populace live in areas where the RNTCP is in operation, and case detection rates (new and old cases combined) in these areas are on the order of 110/100,000, with detection rates for new smear-positive patients on the order of 43/100,000.

Research

Under the RNTCP, increased funding will be available for operational research. Areas for particular emphasis include models of DOT; private sector participation in RNTCP; drug resistance surveillance in DOTS and non-DOTS areas; annual rate of infection (ARI) studies in DOTS and non-DOTS areas; and optimization of sputum microscopy and laboratory cross-checking.

Action Plan

A detailed plan has been established and funded to expand the RNTCP in the next 3-5 years. This plan includes implementing the WHO-recommended reporting and registration system, strengthening microscopy services, ensuring the drug supply, providing intensive supervision and monitoring, and directly observing all of the intensive phase treatment and one dose per week of the continuation phase. The full RNTCP is planned for implementation in nearly one third of the country in the next 3-5 years, with another 50% of the country beginning to use the revised reporting and registration system in this time. The World

DOT vs. DOTS: What's in a Letter?

DOT is the observation of the ingestion of medication by a trained individual. In contrast, DOTS refers to a specific strategy for TB control developed by Dr. Karel Styblo of the International Union Against Tuberculosis and adopted by WHO. The five components are:

➤ Political and administrative commitment (e.g., budgetary allocation, hiring authority, etc.)

➤ Diagnosis based on sputum microscopy of patients reporting to health facilities. Microscopy identifies the infectious patients; active case finding is discouraged as most patients with TB attend health facilities but their diagnosis is missed (compare "Think TB" -- CDC appropriately promotes diagnosis of patients attending health facilities, not community-based case finding).

➤ Good quality drugs. An uninterrupted supply of good quality anti-TB drugs must be available

➤ Short-course chemotherapy given by direct observation.

➤ Systematic monitoring and accountability. The program is accountable for the outcome of every patient who begins treatment. The cure rate is monitored quarterly at every level of the health system, and if any area is not meeting expectations, supervision is intensified. The register-based information system that Karel Styblo designed is remarkably powerful, and allows data verification, program management, and epidemiologic analysis.

Bank will assess implementation progress in 2-3 years and, if the assessment is favorable, fund implementation throughout the country.

Conclusion

On World TB Day 1997, Dr. Hiroshi Nakajima, the Secretary-General of the World Health Organization, declared that "The DOTS strategy represents the most important public health breakthrough of the decade, in terms of lives which will be saved." Nowhere is the potential of DOTS more apparent than in India. Increasing coverage with RNTCP from 2% of the population at present to 35% as is planned in the next 3 years can be expected to result in the diagnosis and systematic registration of more than 350,000 cases of TB every year, with complete treatment of more than 270,000 patients, at least half of whom had positive direct sputum smears at the time of diagnosis. The case-fatality ratio of smear-positive patients in the RNTCP is about 4%, compared with nearly 30% in the previous program; the RNTCP can thus be expected to avert more than 50,000 deaths per year within the next 3 years. Full implementation throughout India would result in an increase of more than one million complete treatments per year and, in the short term alone, would prevent more than 150,000 deaths per year.

—Reported by Thomas Frieden, MD, MPH
Medical Officer on TB, S.E. Asia Regional Office
World Health Organization(Dr. Frieden is assigned from CDC to WHO for this project)

TRAINING AND EDUCATIONAL MATERIALS

New TB Video Available

Tuberculosis in correctional facilities continues to be a concern in many areas. Texas is one of the top 3 states in number of persons incarcerated and in the number of persons employed by correctional facilities,

as well as No. 3 in the total number of cases of TB in the country. Dr. Gail Woods—with funding and support of the National Heart, Lung and Blood Institute Tuberculosis Academic Award, the Texas Department of Health Tuberculosis Division, and the Texas Department of Criminal Justice Media Services—has developed a TB educational video for the employees of correctional facilities. (This group also produced a TB educational video that was designed for incarcerated persons; this video was described in *TB Notes*, No. 2, 1997.) The video is approximately 9 minutes in length. It depicts the TB screening of a correctional officer who is found to be skin test positive. The main points covered are the reasons for routine screening; the risk factors for TB; the relationship between TB and HIV; the difference between TB disease and TB infection; and the importance of preventive therapy. To order, mail a check or money order payable to the Texas Health Foundation for $7 per video requested to:
Texas Health Foundation
P.O. Box 49102
Austin, TX 78765

NEW CDC PUBLICATIONS

Sumartojo EM, Geiter LJ, Miller B, Hale BE. Can physicians treat tuberculosis? Report on a national survey of physician practices *Am J Public Health* 1997;87:2008-2011.

PERSONNEL NOTES

Annette Baird has left the division to take a promotion in the Public Health Practice Program Office (PHPPO). On December 8 she began her new job as secretary for Drs. Boone and Ridderhof in the Laboratory Practice Standards Branch, Division of Laboratory Systems, PHPPO. Annette joined our OD/DTBE staff in 1993, providing assistance to Mr. Don Kopanoff. Since Don's retirement she has been providing support to John Seggerson, Bess Miller, and Carl Schieffelbein, and has done it well. She will be missed, but fortunately she will continue to have some involvement in TB as she assists Dr. Ridderhof.

Debra Carter joined DTBE on November 13, 1997, in the Office of the Director. As a worker trainee, she will be assisting Lisa Favors in the OD with various administrative duties.

Mary Cowan, who joined the Research and Evaluation Branch in 1989, has accepted a position in the Procurement and Grants Office and has the left the division. Recently, Mary made an invaluable contribution to the smooth functioning of Study 22, and she will be missed not only by REB staff but also by the 29 study coordinators with whom she has been working. However, Mary will not be leaving TB entirely, as she will be working with all the TB Cooperative Agreements! Please join us in wishing Mary the best success in her new endeavor.

Lisa Gaston has left the division. She resigned after working as a secretary in the Surveillance and Epidemiology Branch for 4 years, and plans to assist with the care of her grandchild.

Susan Good has been selected for the vacant TB public health advisor position in the Arizona Department of Health. Susan started her career with the CDC in 1989 as an epidemiologist in NCID, Division of Viral & Rickettsial Disease, where she was the national influenza surveillance program coordinator. In 1991 she joined NCEH, Division of Environmental Hazards & Health Effects, where she assisted in data collection, management, and evaluation. Prior to accepting this assignment, she was with the National Immunization Program, Data Management Division, where she planned, developed, and implemented a Clinic Assessment program; helped improve vaccination coverage levels; and assisted in budget preparation and other administrative

and supervisory activities. Susan began her public health career in Oregon where, from 1976 to 1989, she gained programmatic knowledge at the county and state level of health care delivery as a nurse epidemiologist. Susan will join the DTBE and report for her new assignment in Phoenix on February 1, 1998.

Kenneth Long is the new technical lead for TIMS effective December 22, 1997. Ken comes from IRMO, has had extensive experience with client-server computer systems (like TIMS) and was instrumental in launching CDC-WONDER. He replaces Glenda Sentelle, who provided outstanding support during her short time here and who returned to ATSDR.

Kelly Martin joined the Surveillance and Epidemiology Branch on November 10, 1997, as the lead secretary for the branch. Kelly had previously worked in DTBE in the Office of the Director. She went on extended maternity leave to raise her two young daughters and is now set to resume her career. We are fortunate to have Kelly rejoin DTBE.

Cheryl Mayo has been selected for a new public health advisor position in the Philadelphia TB program. She will be working with Melinda Salmon, our Senior Public Health Advisor, and will be assigned as the Preventive Therapy Project Coordinator overseeing screening and follow-up activities targeted to high-risk populations in the city. Cheryl came to work for CDC in April 1990 as a public health associate assigned to the STD program in Chicago. After a year of formal and on- the-job training, she was reassigned to the Philadelphia STD program. After completing her tenure in Philadelphia, Cheryl was assigned to the Detroit STD program in June 1993. Cheryl's new assignment became effective on January 4, 1998.

Ken Shilkret, Senior Public Health Advisor assigned to New Jersey, was honored on December 18 by the New Jersey County Corrections Health Management Team (NJCCHMT) and presented with an award for "support, guidance, and devotion to the NJCCHMT and its mission." The NJCCHMT is an infection control committee of state prison staff that meet periodically to discuss issues regarding TB control and prevention in the correctional facilities. Ken has assisted the group with TB-related issues that include the revision of forms, contact interviewing, and follow-up procedures after inmates are discharged from correctional facilities.

CALENDAR OF EVENTS

February 9-13 and April 13-17, 1998
Postgraduate Course on Clinical Management and Control of TB
Denver, Colorado
Catheryne J. Queen
Natl Jewish Medical and Research Center
(303) 398-1700

February 11-13, 1998
TB Intensive
San Francisco, California
Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

February 23 and September 14, 1998
Mantoux Tuberculin Skin Test Course
Newark, New Jersey
Debra Jean Kantor
NJ Medical School National TB Center
(973) 972-3273

February 26-28, 1998
IUATLD North American Region 3rd Annual Meeting
"TB Among the Disadvantaged"
Vancouver, British Columbia, Canada
IUATLD/British Columbia Lung Association
Tel: (604)731-5864/Fax: (604)731-5810
E-mail: info@bc.lung.ca

March 2-6, 1998
Comprehensive Clinical TB Course
Lantana, Florida
A.G. Holley State TB Hospital
Tel: (561) 582-5666 ext. 280
Fax: (561) 547-5012

March 23, 1998
TB Update I Course: Pediatrics and TB
Newark, New Jersey
Debra Jean Kantor
NJ Medical School National TB Center
(973) 972-3273

March 25, 1998
TB Overview Course
San Francisco, California
Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

April 6, 1998
Preventing TB in the Workplace Course
Newark, New Jersey
Debra Jean Kantor
NJ Medical School National TB Center
(973) 972-3273

April 14-17, 1998
TB Case Management and Contact Investigation Course
San Francisco, California Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

April 24-29, 1998
ALA/ATS 1998 International Conference
Chicago, Illinois
Deborah Richardt: (212) 315-8805 or
Francine Comi: (212) 315-8794

May 12-14, 1998
TB Program Manager's Course
Newark, New Jersey
Debra Jean Kantor
NJ Medical School National TB Center
(973) 972-3273

May 20, 1998
TB Skin-Testing Workshop
San Francisco, California
Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

June 8, 1998
TB and the Law Course
Newark, New Jersey
Debra Jean Kantor
NJ Medical School National TB Center
(973) 972-3273

June 10, 1998
Radiology Seminar
San Francisco, California
Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

June 22-26, 1998
Advanced Medical Mycobacteriology Course
Atlanta, Georgia
Public Health Practice Program Office, CDC
Application deadline is April 27, 1998
Diane Hamm, registrar: (404) 639-4859